

SOMETHING NEW IN COMICS

MARVELS OF SCIENCE

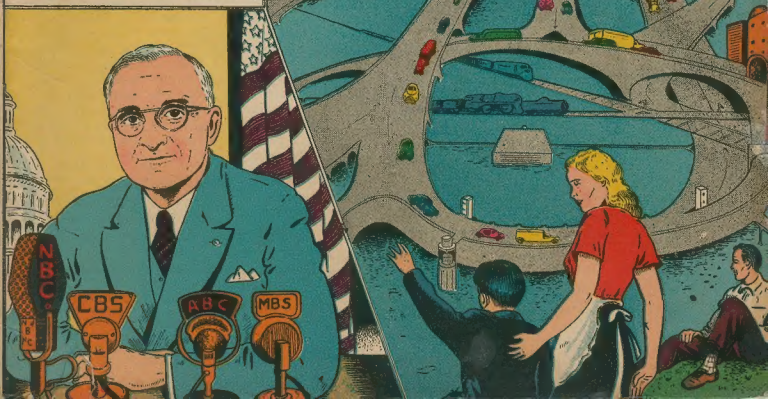
A COMIC FOR YOUNGSTERS AND ADULTS

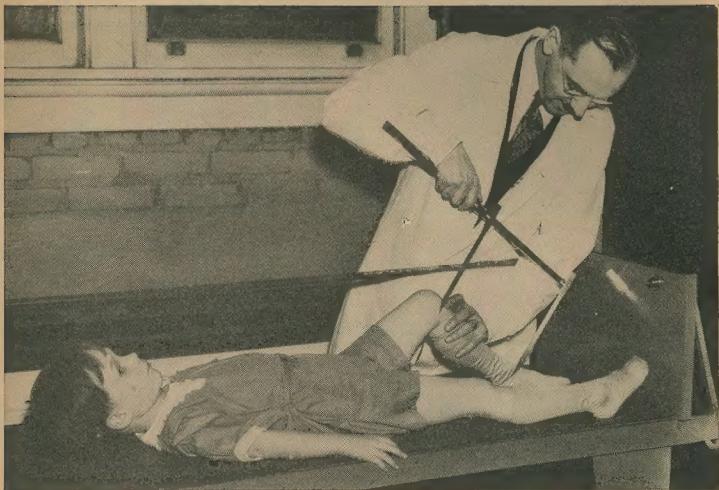
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NO.4
F.D.C.

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MEASURING GROWTH OF CHILD'S BONES

MARVELS OF SCIENCE *A Letter From the Publisher*

Every day the marvels of science bring the world closer together. Recently a man driving his car through Central Park in New York City picked up the telephone on his specially constructed dashboard and called his offices several miles away. Thus begins what may soon be standard equipment on all cars—a 2-way radio set operating via shortwave broadcasts.

This principle of distance control these days is exemplified in many industries and war maneuvers. For instance, we are experimenting with the utilization of "mother" planes, pilot-operated just like any planes you are familiar with but controlling, for distances up to 75 miles, mechanical or robot planes which are called "drones".

The value of such experiments can not be measured by you or us today—we are too near the picture. Conjectures as to how our future mode of living will be affected by the breath-taking progress of science, which is bringing

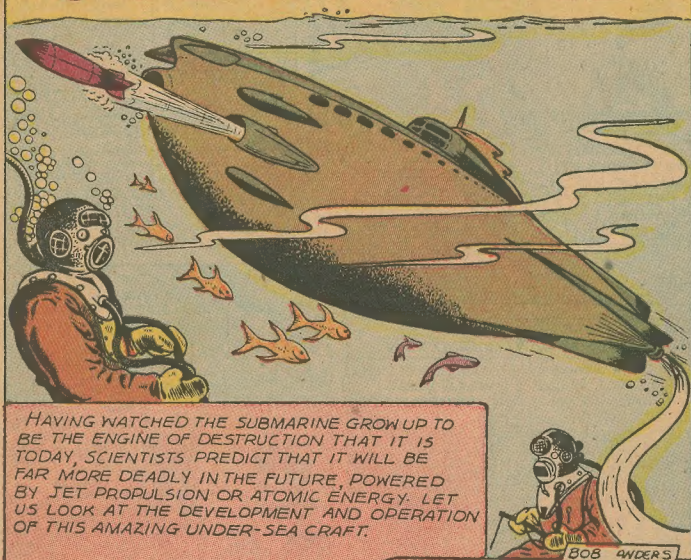
the world closer together, and by the utilization of atomic power, which is putting undreamed of powers in the hands of mortal man, are still only conjectures.

Even though we are all dazzled by the magical feats of science, can we still pause and glance with profit at this message by Dr. Francis E. McMahon, Professor of Philosophy at the University of Chicago? "The world is succeeding in science and failing in wisdom and for that reason a crisis confronts mankind today. Where wisdom reigns there is peace. Science allied to wisdom can bring into existence a prosperous and peaceful world undreamed of in former ages. But science wedded to folly will precipitate mankind into the abyss."

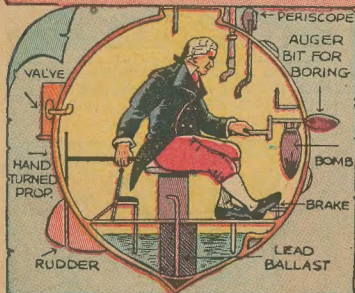
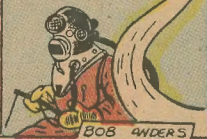
Perhaps facetiously but with more than a germ of truth, the same observation has been made in these different words: "The atomic bomb is here to stay—but are we?"

TED CHARLTON, Publisher

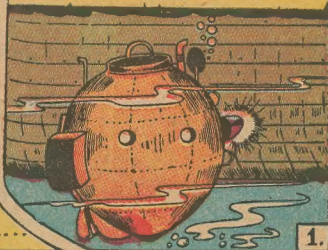
THE SUBMARINE



HAVING WATCHED THE SUBMARINE GROW UP TO BE THE ENGINE OF DESTRUCTION THAT IT IS TODAY, SCIENTISTS PREDICT THAT IT WILL BE FAR MORE DEADLY IN THE FUTURE, POWERED BY JET PROPULSION OR ATOMIC ENERGY. LET US LOOK AT THE DEVELOPMENT AND OPERATION OF THIS AMAZING UNDER-SEA CRAFT.



BUSHNELL'S PURPOSE WAS TO BLOW UP THE BRITISH FLEET THEN IN NEW YORK HARBOR... BUT THE CRUDE INVENTION FAILED AGAINST THE THICK COPPER BOTTOMS OF THE ENGLISH FRIGATES.



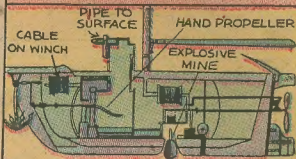
IN 1776, DURING OUR WAR OF INDEPENDENCE, DAVID BUSHNELL BUILT THE FIRST SUBMARINE, CALLED "THE TURTLE"....

AS THE TURTLE FLED, HER BOMB EXPLODED...

WHAT'S THAT EXPLOSION?

JUST THE AMERICAN'S
NEW FANGLED
MACHINE WHICH
DID NOT
WORK!
HA! HA!

THEN ABOUT 1800, ROBERT
FULTON BUILT THE "NAUTILAS".
IT EMPLOYED MANY FEATURES
OF THE MODERN SUBMARINE.



SO FULTON WENT TO
ENGLAND, BOUGHT AN
OLD FRIGATE AND
BLEW IT UP IN THE
THAMES RIVER.

BY JOVE,
THE AMER-
ICAN HAS A
GREAT INVENTION
THERE!

FULTON OFFERED HIS SERVICES TO
FRANCE, AT WAR WITH ENGLAND THEN.

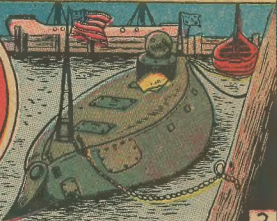
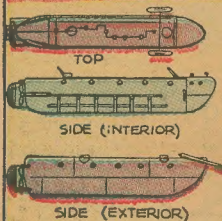
GIVE ME PERMISSION
AND I WILL BLOW
UP THAT BRITISH
WARSHIP!

NONSENSE! YOU
WOULD BLOW
YOURSELF UP!



DURING THE CIVIL WAR, THE CONFEDERATES
BUILT A SUB CALLED "THE DAVID"-----

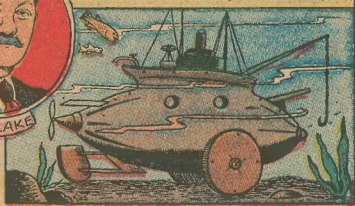
IN 1898, JOHN P. HOLLAND BUILT "THE
PLUNGER". IT WAS PROPELLED BY
STEAM UPON THE SURFACE, CHARGED
AN ELECTRIC BATTERY-----



BUT WHEN SHE SUBMERGED TO RUN ON HER BATTERY, THE FIRE UNDER HER BOILER HAD TO BE EXTINGUISHED.



IN THE SAME YEAR, SIMON LAKE BUILT HIS 'ARGONAUT', PROPELLED ON THE SURFACE BY GASOLINE....

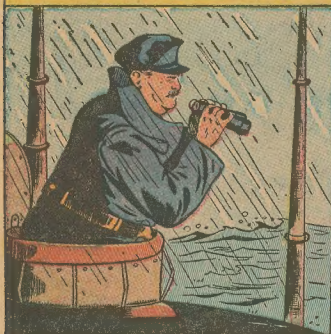


LAKE BECAME FAMOUS--BUILT SUBMARINES FOR EUROPEAN POWERS----

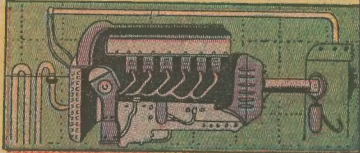
ADMIRAL VON TIRPITZ, YOU CAN USE THESE SUBS FOR OFFENSIVE PURPOSES.



LAKE MADE A VOYAGE IN THE 'ARGONAUT' IN A STORM, FROM THE DELAWARE RIVER TO NEW YORK, PROVING HIS SHIP SEA-WORTHY.



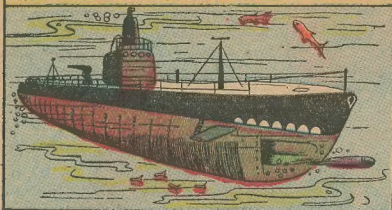
A FEW YEARS BEFORE WORLD WAR I, DIESEL ENGINES MADE THE SUB AN EFFICIENT, DEADLY WEAPON----



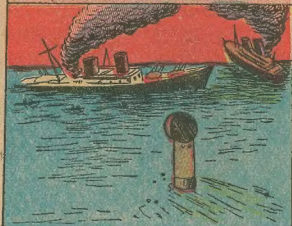
DIESEL ENGINES CHARGE THE SUB'S ELECTRIC STORAGE BATTERIES, THE SAME AS THE ENGINE OF THE AUTOMOBILE CHARGES ITS BATTERY WHEN THE CAR IS RUNNING. BUT IN WAR, THE SUB MAY RUN ON THE SURFACE ONLY FOR A FEW HOURS AND USUALLY AT NIGHT....



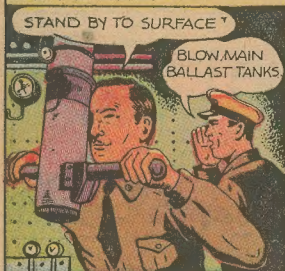
ONCE HER BATTERIES ARE CHARGED, THE SUB MAY RUN FOR FROM 20 TO 30 HOURS UNDERNEATH THE SURFACE ----



WHEN SUBMERGED, THE PERISCOPE IS THE SUB'S ONLY EYE



HERE'S HOW THE SUB OPERATED IN THE LAST WAR WHEN THE COMMANDER DECIDED TO SINK THE ENEMY ----



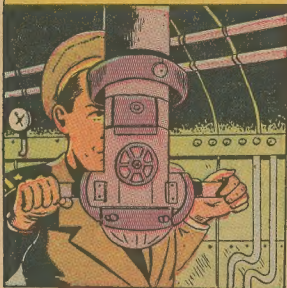
BUT--ENEMY WARSHIPS...



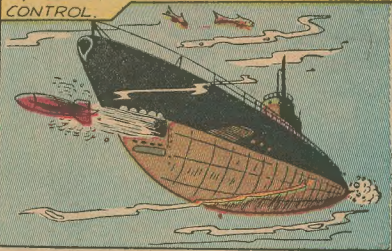
TRIM ALL BALLAST TANKS TO LEVEL OFF AT THIRTY FEET----



ONLY THE COMMANDER SEES
THE TARGET AND HE FIRES
THE TORPEDOES---



ONCE FREE OF THEIR TUBES, THE TORPEDOES
ARE ON THEIR OWN, DRIVEN BY
THEIR LITTLE DIESEL ENGINES, DIRECTED
TO THE TARGET BY THE SPINNING GYRO
WHICH THE COMMANDER HAS AIMED
BY REMOTE
CONTROL.



TWO HITS !!



BUT A DESTROYER HAS COME UPON
THE SCENE ----



SET THE HYDROPLANES
TO LEVEL HER OFF
AT 60 FEET. TRIM
ALL BALLAST TANKS
AT 60 FEET



MEANWHILE, THE DESTROYER
LAYS DOWN A PATTERN OF
DEPTH CHARGES !



DEPTH CHARGES EXPLODE NEARBY!

DESTROYER DROPPING
ASH-CANS, FULL
SPEED AHEAD!



AND THE SUB DODGES THRU THE
WATER ...

DESTROYER PROP-
ELLERS DIRECTLY
OVERHEAD ASTERN
SIR!

LEFT-HARD
LEFT!



A QUICK LOOK, THEN ---



THERE SHE SITS
ON OUR STAR'RD
BEAM. PREPARE
TORPEDOES!

DESTROYER PROP-
ELLERS DRAWING.
AWAY, SIR!

STAND BY
TO SURFACE!
BRING HER UP
FAST TO PER-
ISCOPE LEVEL!



A PERFECT
HIT--THAT'S
THREE TODAY!



PEACE-- AND HOMEWARD BOUND!

I HOPE THERE'LL
NEVER BE
ANOTHER WAR!

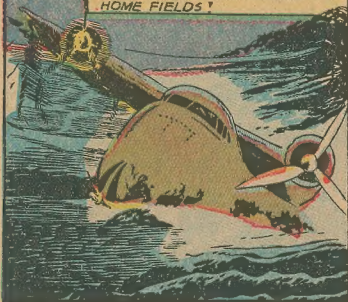
YOU SAID IT!
THE SUBMARINE
OF THE FUTURE
WILL BE A
HORRIBLE WEAPON
OF DESTRUCTION!



Enemy OF AVIATION

AT LONG LAST, FOG, AVIATION'S ENEMY NO. 1, HAS BEEN CONQUERED! BORN OF GRIM NECESSITY DURING WORLD WAR II, THIS AMAZING INVENTION WHICH ROLLS BACK FOG, IS NOW MAKING COMMERCIAL AIR TRAVEL SAFE!

DURING THE EARLY MONTHS OF 1942, SCORES OF PRECIOUS INCOMING R.A.F. PLANES WERE LOST IN CRASHES AT FOG-BOUND HOME FIELDS!



PRIME MINISTER WINSTON CHURCHILL SUMMONS A CONFERENCE OF SCIENTIFIC AND MILITARY RESEARCH EXPERTS.

I TELL YOU, MR. CHURCHILL, IT CAN'T BE DONE!

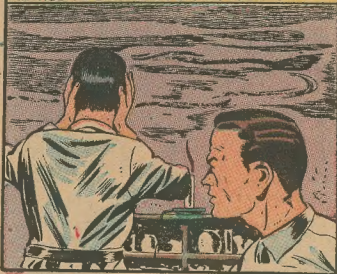
GENTLEMEN, WE'VE GOT TO FIND A WAY TO DISPERSE FOG!



FROM THE VERY FIRST, SCIENTISTS REALIZED THAT HEAT METHODS WERE BEST IN DEFEATING FOG... FOR FOG AND HOT AIR CANNOT EXIST TOGETHER.



CONTINUING THEIR RESEARCH, THE MEN OF FIDO (THE FOG INVESTIGATING DISPERSAL OPERATION)... ATTEMPTED TO DISCOVER A METHOD TO DISSOLVE FOG BY HEAT?



ON NOV. 4, 1942, TWO SUCCESSFUL TESTS WERE MADE IN ROLLING BACK THE FOG... THE FIRST, WITH A GASOLINE-BURNING TROUGH AND THE SECOND, USING COKE?



LATER IN A CONFERENCE ROOM.

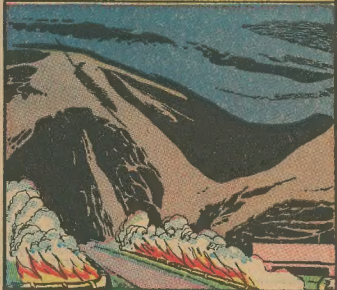
COKE PRODUCED LESS SMOKE, BUT TOOK LONGER TO LIGHT UP!
GASOLINE GAVE OFF A HEAVY DARK SMOKE, BUT LIT QUICKLY... I THINK GASOLINE WILL DO THE TRICK!



IT WAS DECIDED TO MAKE THE FIRST FULL SCALE FIDO TEST AT AN R.A.F. PATHFINDER STATION IN GRAVELEY, WHICH HAD THE REPUTATION OF HAVING THE THICKEST FOGS IN ENGLAND?



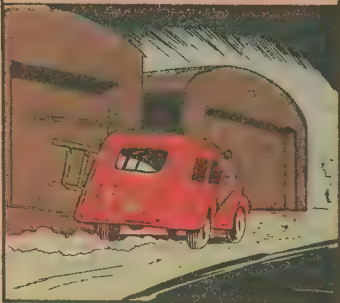
A 500-YARD LONG RECTANGULAR GAS BURNING PIPE WAS INSTALLED AROUND THE APPROACH TO THE FIELD... AND ANOTHER ALONGSIDE THE RUNWAY.



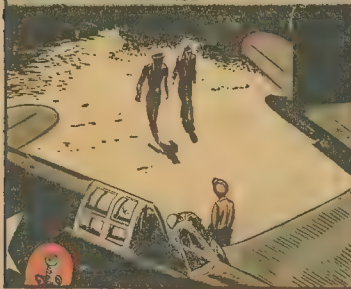
THAT NIGHT...IN JANUARY OF 1943, A PEA-SOUP FOG DESCENDED ON THE FIELD. AND THE FIDO PUMPS WERE TURNED ON.



NOT ONLY WAS THE FOG LIFTED, BUT THE GLARE WAS SO INTENSE, ALL FIRE APPARATUS FROM 50 MILES AROUND RACED TO THE SCENE.



ON THE NIGHT OF JULY 17, WITH VICE-MARSHALL BENNETT WAITING TO TAKE OFF IN A BOMBER, ANOTHER TEST WAS MADE.



WHEN THE FIDO PUMPS WERE STARTED, VISIBILITY WAS LIMITED TO 100 YARDS!



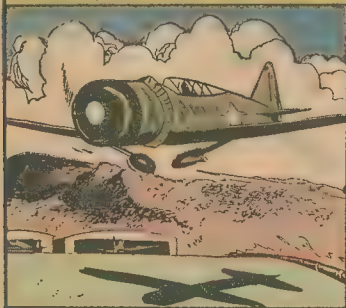
SHORTLY AFTERWARDS, THE FOG STARTED TO CLEAR AS THE UNVAPORIZED GASOLINE SENDS OFF BLACK CLOUDS OF SMOKE.



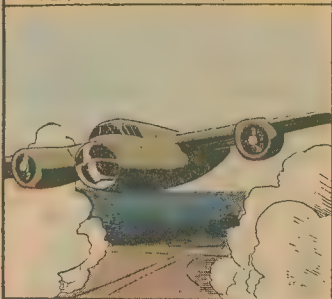
THEN, THE FLAMES VAPORIZE AND BURN CLEANLY. AS THEY RAPIDLY ROLL BACK THE FOG.



A MOMENT LATER, THE FOG HAD CLEARED
SUFFICIENTLY FOR A PLANE TO LAND.

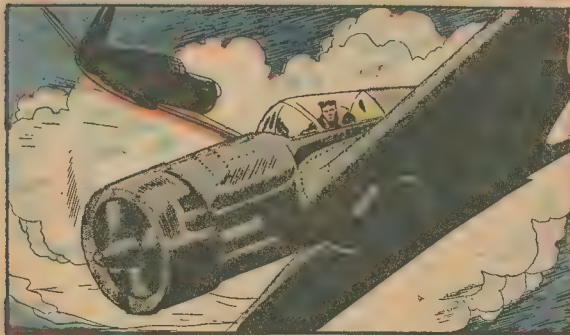


AFTER THE FOG HAD COMPLETELY CLEARED
IN 7 MINUTES VICE-MARSHALL BENNETT
TOOK OFF IN A BIG BOMBER.



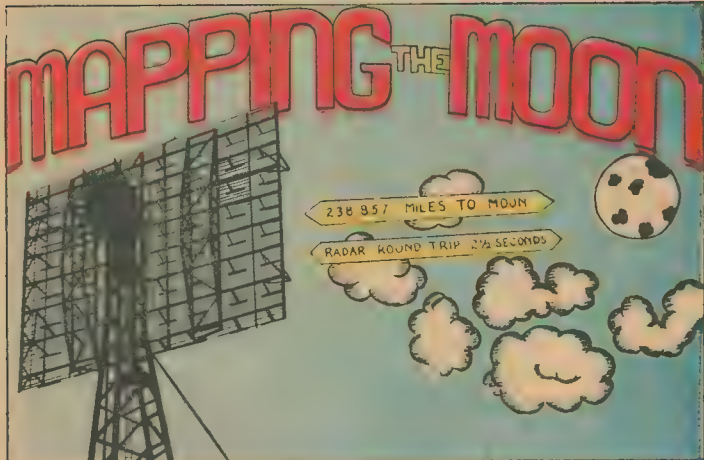
- LONDON NEWS -
FIDO INSTALLATIONS ARE
MADE ON AIR FIELDS
FIDO INSTALLATIONS
ENABLE MANY PLANES
TO TAKE OFF AND
LAND ON FOG-
BOUND FIELDS..
MATERIALLY HELPING
TO SHORTEN THE
WAR

TODAY FIDO INSTALLATIONS, EVEN MORE
EFFECTIVE THAN DURING THE WAR, ARE
BEING USED IN BOTH ENGLAND AND THE
U.S. BY COMMERCIAL AIR LINES.

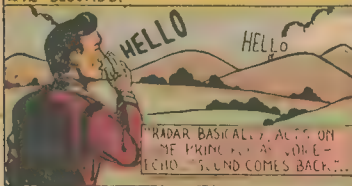


SOON, WITH
THE AID OF
RADIO, RADAR
AND FIDO
FOG-FIGHTING
APPARATUS,
COMMERCIAL
AVIATION MAY
VERY WELL
BECOME THE
WORLD'S SAFEST
MEANS OF
TRANSPORTATION.

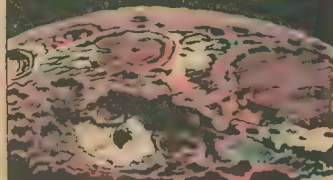
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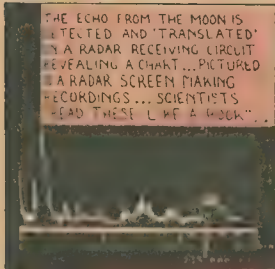
FOR THE FIRST TIME IN MAN'S LONG HISTORY, SCIENCE SUCCEEDED ON JAN. 10, 1946, IN SENDING A SIGNAL TO OUTER SPACE. ON THAT DATE A RADAR SIGNAL TO THE MOON WAS HEARD BACK ON EARTH IN 2 1/2 SECONDS!



THE MOON IS A "DEAD WORLD" OF CRATERS, MOUNTAINS... THIS IS ALBATEGNIUS CRATER, IN THE CENTER OF VISIBLE DISK OF THE MOON...



THE ECHO FROM THE MOON IS DETECTED AND 'TRANSLATED' BY A RADAR RECEIVING CIRCUIT REVEALING A CHART... PICTURED IS A RADAR SCREEN MAKING RECORDINGS... SCIENTISTS HEARD THESE LIKE A BUSH...

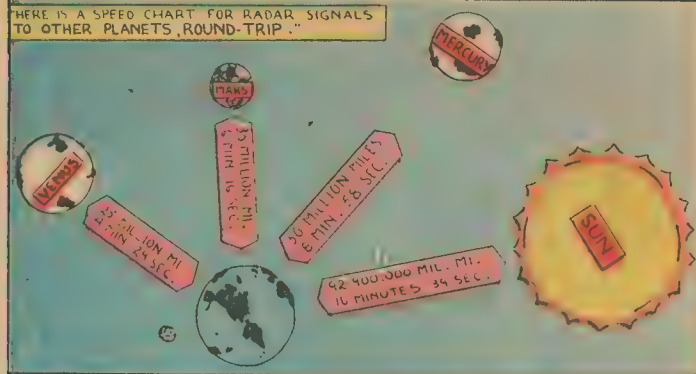


THE EVANS LABORATORY, BELMAR, N.J., WAS THE LOCALITY WHERE FIRST MOON-CONTACT VIA RADAR WAS MADE. A GROUP OF U.S. ARMY SIGNAL CORPS TECHNICIANS FLASHED THE POWERFUL IMPULSE TOWARD THE MOON...

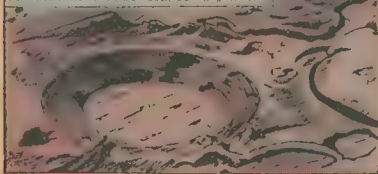


THE IMPORTANT RESULT OF THIS RADAR CONTACT WITH THE MOON IS THAT IT WILL MAKE POSSIBLE MAPPING OTHER PLANETS... PERHAPS EVEN LEAD TO RADAR-GUIDED ROCKET PLANES OR MISSILES TO THE MOON AND ELSEWHERE...

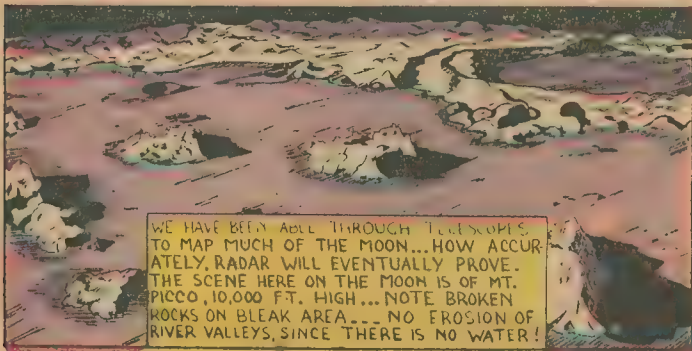
HERE IS A SPEED CHART FOR RADAR SIGNALS TO OTHER PLANETS, ROUND-TRIP."



TO THE MOON AND BACK IN $2\frac{1}{4}$ SECONDS COVERS A DISTANCE. ONE WAY OF 238,857 MILES... PICTURED IS THE HIGHEST CRATER OF THE MOON, ARISTARCHUS. AT TOP IS FISSURE CALLED SCHROEDER'S CANYON.

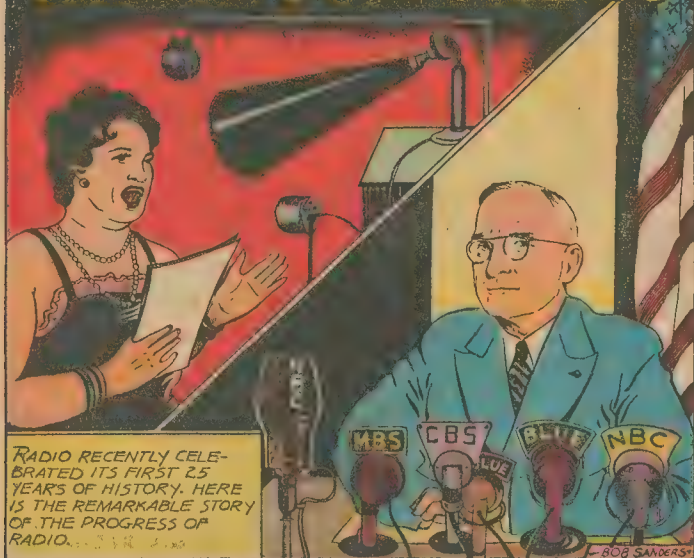


THIS TECHNIQUE OF RADAR CONTACTING WAS DEVELOPED DURING WORLD WAR II, TO DETECT ENEMY ROCKETS ABOVE THE ATMOSPHERE! THE TECHNIQUE IS AN ULTRA-HIGH FREQUENCY RADAR BEAM, AND ELECTRICAL RECORDINGS WERE MADE BACK AT BELMAR AT THE SPEED OF LIGHT. THUS A NEW SCIENTIFIC ADVENTURE HAD OPENED!



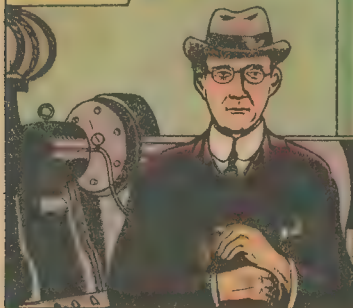
WE HAVE BEEN ABLE THROUGH TELESCOPES TO MAP MUCH OF THE MOON...HOW ACCURATELY, RADAR WILL EVENTUALLY PROVE. THE SCENE HERE ON THE MOON IS OF MT. PICCO, 10,000 FT. HIGH... NOTE BROKEN ROCKS ON BLEAK AREA... NO EROSION OF RIVER VALLEYS, SINCE THERE IS NO WATER!

RADIO PROGRESS

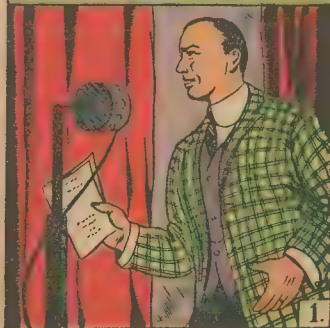


RADIO RECENTLY CELEBRATED ITS FIRST 25 YEARS OF HISTORY. HERE IS THE REMARKABLE STORY OF THE PROGRESS OF RADIO.

IN 1895, GUGLIELMO MARCONI EXPERIMENTED WITH WHAT HE CALLED A SEVENTH SENSE, -- "RADIO"!



BUT COMMERCIAL BROADCASTS WERE NOT MADE UNTIL 1921 FROM OLD KDKA IN PITTSBURGH.



WORLD'S FIRST FULL TIME ANNOUNCER, HAROLD ARLIN, KDKA, 1921.



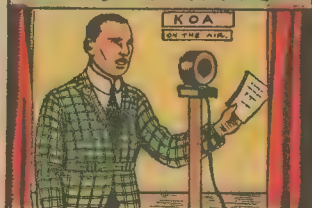
BOYS WERE THE FIRST RADIO ENTHUSIASTS. THEY LISTENED THRU HEADPHONES....



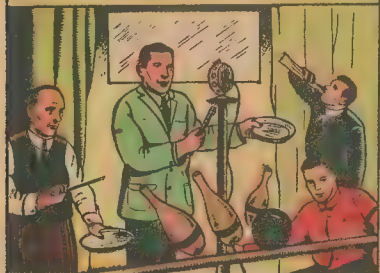
BY 1923, ONE-TUBE BATTERY SETS WERE POPULAR.....



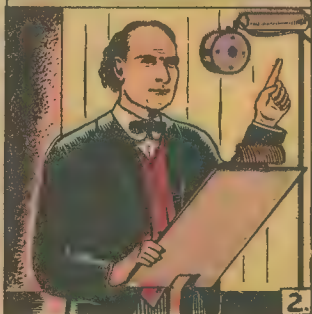
AN EARLY BROADCASTING STATION--- CLOTH DRAPES WERE USED FOR SOUND-PROOFING---



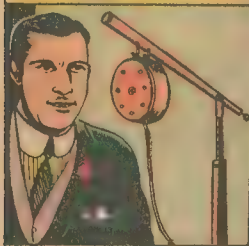
IN THE EARLY '20's, THEY USED SAUCE-PANS AND BOWLING PINS FOR SOUND EFFECT ---



AND THE "GREAT COMMONER" WM. JENNINGS BRYAN, MADE HIS FIRST BROADCAST FROM A PITTSBURGH CHURCH----



IN THE EARLY 20'S, THE MICROPHONE LOOKED LIKE A TIN CAN AND SWUNG ON A MOVEABLE ROD----



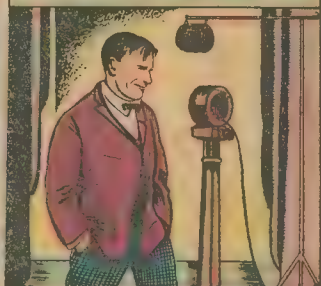
AND THE CLIQUOT CLUB ESKIMOS MADE POPULAR MUSIC----



THEN CAME CORRELL AND GOSDEN, AMOS 'N ANDY----



AND WILL ROGERS SPUN HIS HOME-MADE JOKES----



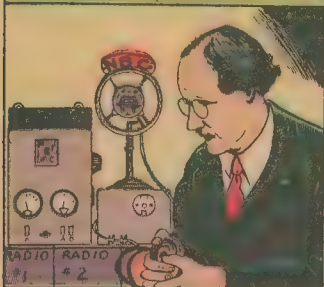
THERE WERE CLARA, LU 'N' EM, --- ISOBEL STARKEY, HELEN KING AND ISOBEL CARROTHOR. THEY CHEERED HOUSEWIVES----



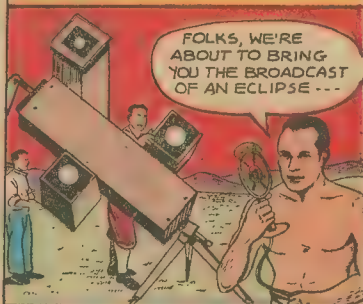
NOVELIST FANNIE HURST SAT BEFORE A "TIN-CAN" MIKE----



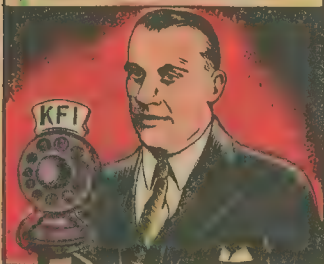
AND HERE'S THE SET THAT PROF. PICARD USED TO BROADCAST THE ACCOUNT OF HIS 10-MILE STRATOSPHERE ASCENT IN 1932.



SAME YEAR---TED HUSING BROADCAST ECLIPSE OF THE SUN FROM NORTH CONWAY, N. H.



AND SMOOTH-TALKING GRAHAM McNAMEE THRILLED SPORTS FANS.



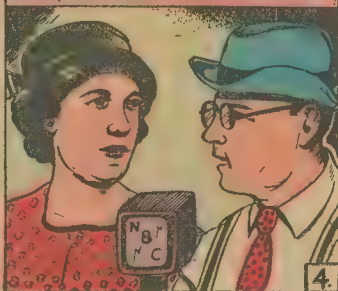
EDDIE CANTOR FIRST MADE GOO-GOO EYES AT A TIN-CAN MIKE ---



FLOYD GIBBONS WAS ONE OF RADIO'S FIRST NEWS COMMENTATORS ---



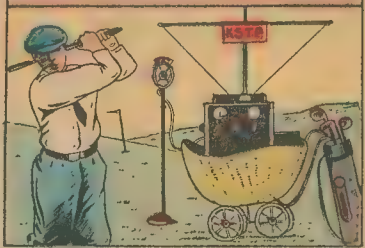
BY 1935, FIBBER MCGEE AND MOLLY--JIM AND MARION JORDAN--



AND THE FIRST BROADCAST OF A
SKI MEET WAS MADE ---



FIRST BROADCASTS OF GOLF MEETS
WERE MADE FROM BABY BUGGIES.

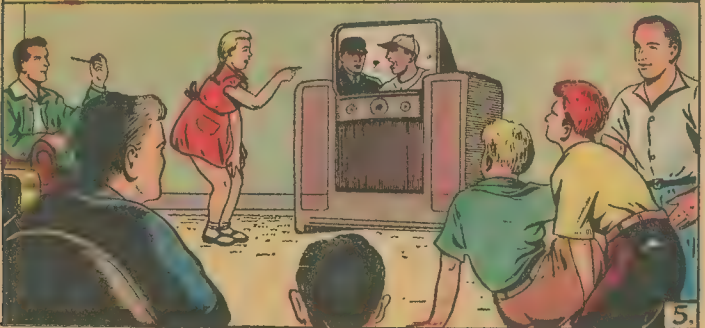


THEN CAME HITLER, INFLAMING
MURDEROUS GERMAN MOBS.

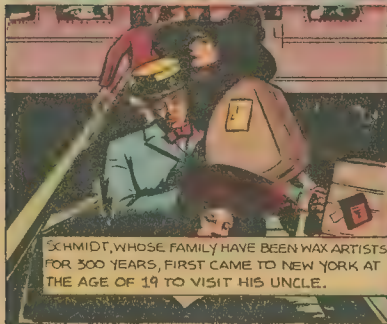
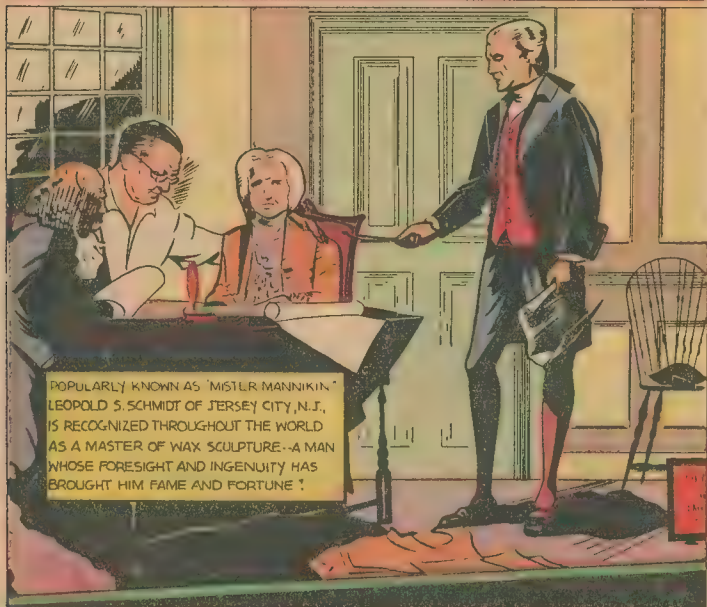
THE CRASH OF THE HINDENBURG
WAS BROADCAST FROM THE SCENE ---



AND NOW, WITH PEACE, WE LOOK FORWARD TO THE FUTURE --- TELEVISION !!



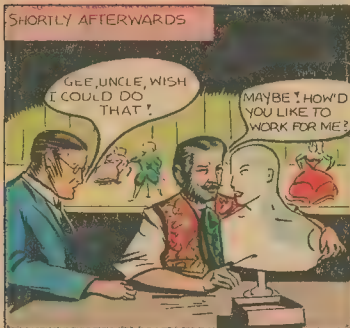
WAX SCULPTURE MASTER



YOUNG LEOPOLD MARVELS AT THE STRIKING CREATIONS HIS UNCLE HAD DESIGNED FOR THE FAMOUS EDEN MUSEE ?



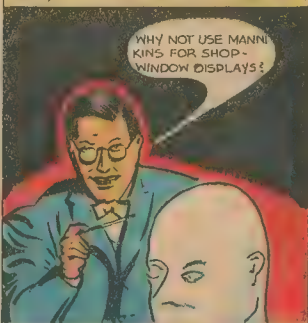
SHORTLY AFTERWARDS



LEOPOLD BECOMES ABSORBED IN AIDING HIS UNCLE TO SCULPTURE MANNIKINS AND MUSEUM FIGURES



LATER, SCHMIDT IS STRUCK WITH A NEW IDEA!



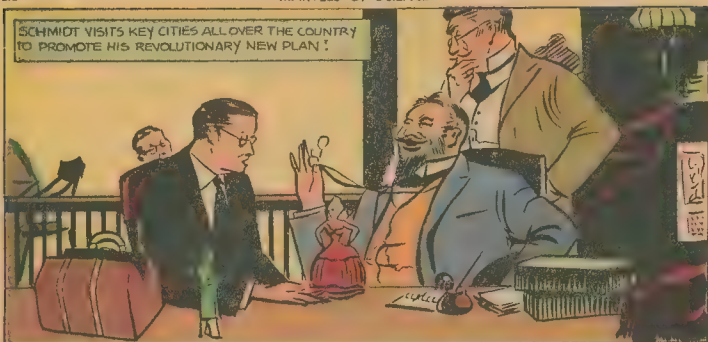
BUT WHEN LEOPOLD REVEALS HIS PLAN ...



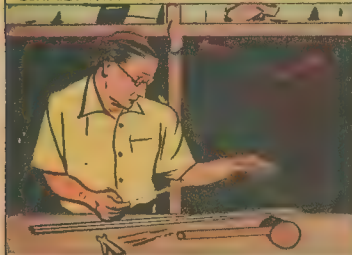
YOUNG SCHMIDT HAS SUCH FAITH IN HIS IDEA, HE LEAVES HIS UNCLE TO ENTER BUSINESS HIMSELF!



SCHMIDT VISITS KEY CITIES ALL OVER THE COUNTRY TO PROMOTE HIS REVOLUTIONARY NEW PLAN!



AFTER SELLING WAX MANNIKINS AT \$150 EACH TO SEVERAL DEPARTMENT STORE MANAGERS, SCHMIDT RETURNS TO HIS WORKSHOP.



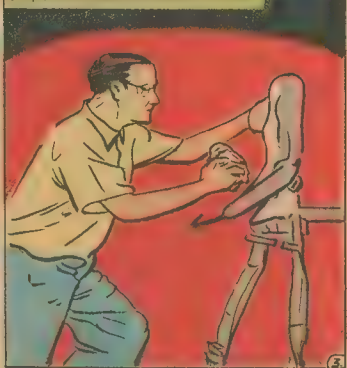
USING 20 FEET OF LEAD PIPE CONNECTED WITH WIRE, SCHMIDT CONSTRUCTS A SKELETON MODEL.

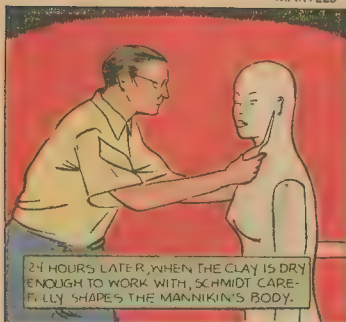


NEXT, HE PREPARES THE CLAY, USING A SPECIAL FORMULA WHICH DOES NOT DRY TOO QUICKLY.

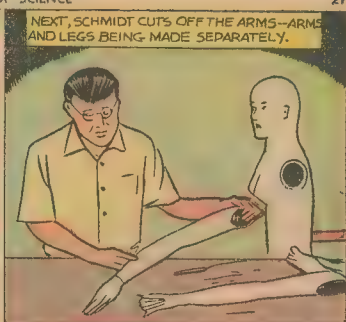


THEN HE EXPERTLY DRESSES THE CLAY ON THE LEAD-PIPE SKELETON

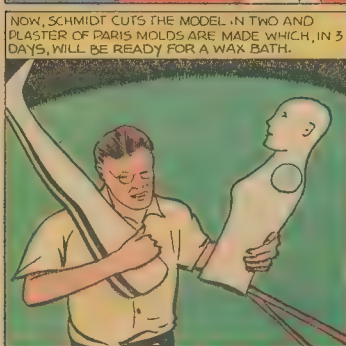




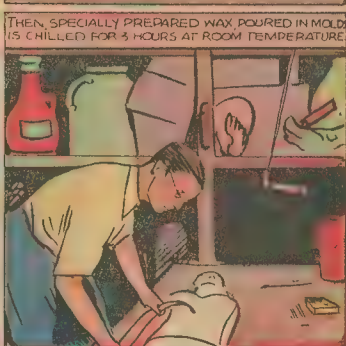
24 HOURS LATER, WHEN THE CLAY IS DRY ENOUGH TO WORK WITH, SCHMIDT CAREFULLY SHAPES THE MANNIKIN'S BODY.



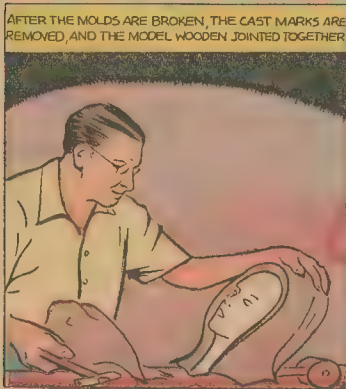
NEXT, SCHMIDT CUTS OFF THE ARMS--ARMS AND LEGS BEING MADE SEPARATELY.



NOW, SCHMIDT CUTS THE MODEL IN TWO AND PLASTER OF PARIS MOLDS ARE MADE WHICH, IN 3 DAYS, WILL BE READY FOR A WAX BATH.



THEN, SPECIALLY PREPARED WAX, POURED IN MOLDS IS CHILLED FOR 3 HOURS AT ROOM TEMPERATURE.



AFTER THE MOLDS ARE BROKEN, THE CAST MARKS ARE REMOVED, AND THE MODEL WOODEN JOINTED TOGETHER.

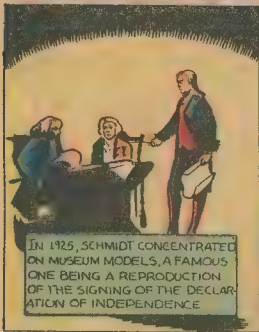


THE FIGURE GETS A TURPENTINE BATH, THEN ITS FEATURES ARE PAINTED ON ITS FACE.

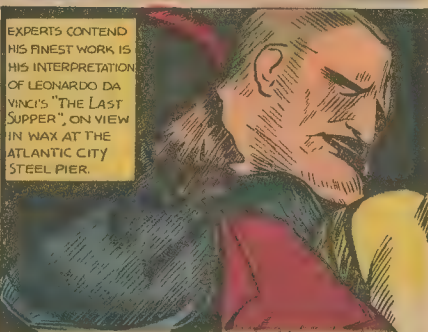
GLASS EYES ARE INSERTED THEN, INSERTED ONE AT A TIME INTO THE WAX SCALP ARE $\frac{3}{4}$ " HAIR STRANDS.



WHEN SCHMIDT'S FIRST MANNIKIN IS SHOWN IN A WINDOW, IT CREATES A SENSATION AND ORDERS POUR IN.



IN 1925, SCHMIDT CONCENTRATED ON MUSEUM MODELS, A FAMOUS ONE BEING A REPRODUCTION OF THE SIGNING OF THE DECLARATION OF INDEPENDENCE.

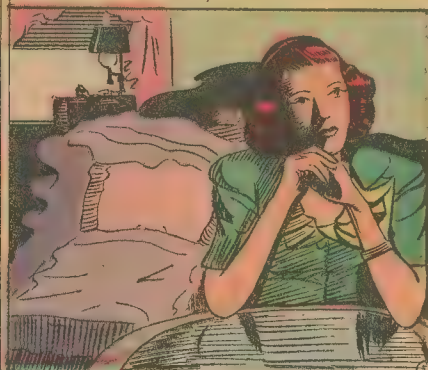


EXPERTS CONTEND HIS FINEST WORK IS HIS INTERPRETATION OF LEONARDO DA VINCI'S "THE LAST SUPPER", ON VIEW IN WAX AT THE ATLANTIC CITY STEEL PIER.

DURING THE WAR, SCHMIDT DESIGNED A COPPER MAN FOR GENERAL ELECTRIC CO., WHICH WAS USED TO TEST ELECTRICALLY-HEATED FLYING SUITS, BLANKETS, AND OTHER EQUIPMENT.



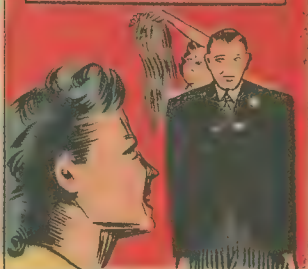
BUT SCHMIDT IS PERHAPS PROUDEST OF HIS "BREATHING" MECHANICAL WAX FIGURES, INTRODUCED IN 1943!



AT THE PRESENT TIME, THE BUSINESS IS A FAMILY AFFAIR, WITH HIS WIFE, CHILDREN AND IN-LAWS ON THE PAYROLL, ALL TRAINED BY SCHMIDT.



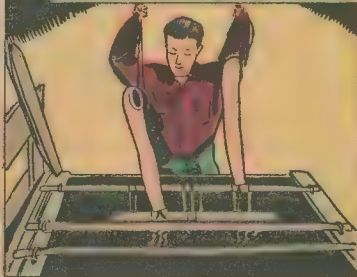
HIS WIFE AND DAUGHTER SELECT, BUY AND INSTALL ALL HAIR. AVERAGE HEAD OF FEMALE HAIR COSTS \$4.25



ANOTHER DAUGHTER SPECIALIZES IN PAINTING COMPLETED MANNIKINS AND IN SEARCHING FOR IDEAS IN CURRENT PERIODICALS.



SCHMIDT'S SON IS AN ALL AROUND EXPERT AND IS FOREMAN OF THE SHOP.



STILL ANOTHER EXPERT IS SKILLED AT SPRAYING MODELS WITH LACQUER BEFORE THEY ARE PAINTED



TODAY THE 71-YEAR OLD MR SCHMIDT IS STILL THE GUIDING GENIUS OF THE AMAZING BUSINESS WHICH IS MAKING THE U.S.A. ONE OF THE GREAT CENTERS OF WAX ARTISTRY.



A TRIP TO THE MOON SOON?

With the harnessing of atomic energy, a trip to the moon will soon become possible, in the opinion of the United States Rocket Society:

The skeptics think differently. They ask: "What about the possibility of a collision with a meteor? Could the human body stand the terrible strain of the terrific speed?"

But according to a leading rocket enthusiast, Sherman H. Dryer, director of the MBS series, "Exploring the Unknown" countless people in the past were skeptical of the steamboat, the automobile and the airplane. Mr. Dryer hopes that the moon may be claimed in the name of the United States. Thus it is possible we could discover valuable elements on the moon, and we would have a perfect vantage point for studying the weather conditions of the earth.

The vice-president of the United States Rocket Society, John Griggs, asserts: "We have as our principal objective the sending of a rocket to the moon. Our entire membership is backing that enterprise, and perhaps in not too many years our efforts will be rewarded." The opinion of his organization is that it would take \$300,000 to send a rocket to the moon. Besides that hitch of \$300,000, even the enthusiastic Mr. Dryer sees another: "There's no doubt that we can get to the moon, but scientists are not sure how on earth we'll get back."

It was more than 300 years ago that Cyrano de Bergerac wrote a book entitled "Voyage to the Moon and Sun" in which he pointed out the possibility of reaching the moon by a rocketship. But even today, no one is thinking of travelling to the sun, whose surface temperature is estimated to be about 6,000 degrees centigrade.

Faster Than Sound

Speeding faster than sound—750 miles an hour—faster than the rotation of the earth on its axis at the equator—more than 1000 miles an hour—is the modern rocket. It overcomes problems that the airplane and jet-propelled plane can not sur-

mount. For instance, the latter has reached 610 miles an hour. But any greater speed would encounter too much resistance from the air. Why not then fly a hundred miles above the earth where the air is too thin to resist? But at such a high altitude, the air is too thin to burn the fuel that powers the jet. However, the rocket does not need air, for it carries its own oxygen with which to burn the fuel. And the gasses produced by burning emerge from its tail in a flaming burst whose reaction can propel the rocket into space—distance space.

One of the earliest experimenters with the rocket was Dr. Robert H. Goddard of Worcester, Mass. One of his rockets succeeded in travelling 184 feet in 2½ seconds—a speed of 60 miles an hour. However, some of his rockets fizzled and some exploded. By December 30, 1930, a rocket reached a maximum speed of 500 miles per hour. These were only models and they led people to think of practical uses.

In July 1926, the first international rocket mail flight was made across the Rio Grande from Texas to Mexico. And now scientists predict that rockets will soon be carrying mail from New York to London and in less than an hour.

The V-2 rocket which the Germans last year sent against England attained a maximum speed of more than 400 miles an hour. And at the highest point in its flight the rocket rose to between 60 and 70 miles above the earth.

In the day time it looked like a flying gas main. At night it appeared like the tail of a comet. The V-2 rocket was 50 feet long and weighed 12 tons. It carried a nine ton fuel load of alcohol and liquid oxygen which was completely burned in 70 seconds after launching.

When the rocket attains a speed of 25,000 miles an hour it will be able to escape the pull of the earth's gravitational attraction. At this speed, the chains of the earthbound man are snapped. Then he is at last a free traveller in the vast open spaces of the universe. Then he will be free to explore

in his rocket ship the moon, and perhaps the planets.

Soaring Imagination Supreme

Shooting Star's Rocket

The famed P-80 Shooting Star also uses the rocket in an auxiliary way to give a sharp lift during its take-off. Two rockets are installed directly below the engine. They are heavy steel tubes, three feet long, which burn a solid rocket fuel—the blast escaping through a $\frac{3}{8}$ inch nozzle. For about 15 seconds these rockets add a 2,000 pound thrust to the 4,000 developed by the P-80's General Electric 1-40 jet engine.

These rockets have been used in two ways. When fired from the cockpit by the pilot at the start of the forward motion of the plane, they speeded up the take-off. When fired the moment the plane was ready to leave the ground, after its run, the P-80 attained a spectacular angle of climb, appearing to go almost straight up. As a result, this plane can now take off in only 1185 feet, or less than half of the normal take-off distance.

As against the terrific speed of the rocket and jet plane, consider the performance of the first flying machine to leave the ground. It was on a clear, cold December day in 1903 on a desolate, windy beach on the North Carolina coast that Orville and Wilbur Wright checked the landing-skids of their queer contraption before they started its engine. Then, for just twelve seconds the machine flew! Then began the race to increase the distances and speeds of flight. More cylinders were added to the engine and then the pitch of the propeller was changed and the body streamlined. But as speed increased, visible limits appeared to the performance of the propeller-driven airplane. The resistance of the air, the stresses on the propeller, set a known upper limit to the speed of the conventional plane.

So in the early 1930's, along came a young Englishman, Frank Whittle, who built an unconventional plane—a plane without a propeller—a jet propulsion plane. But May 1941, Whittle's jet-powered plane made its first official flight at 450 miles an hour. And not long ago an English jet-propelled plane hit 610 miles an hour!

Within the next three years aircraft will be developed capable of flying 1,000 miles an hour, according to the National Advisory Committee for Aeronautics. Such a speed would be 210 miles an hour faster than sound and would carry a plane between California and New York in two and a half hours. Plans for such a plane, radically different in design from present-day aircraft, are far advanced.

In reaching speeds above that of sound, aircraft designers face problems involving entirely new conditions of flight. For instance: A conventional plane stays aloft by creating pressure under its wings. Pressure impulses run ahead of the plane at the speed of sound and prepare the air to flow over the surface of the approaching plane in an orderly fashion, like water split by the bow of a boat. But when aircraft go through the air at the speed of sound, pressure impulses can not give adequate advance warning and the result is almost comparable to running against a solid wall. The air, unable to get out of the way, piles up around the plane and causes vibration. Control then becomes difficult, if possible at all, and the plane might actually shake apart.

By testing objects dropped from B-29s at 40,000 feet, however, experts of the National Advisory Committee for Aeronautics have found that much of the difficulty may be eliminated by doubling the length of conventional planes and placing the wings at a 45-degree angle to the fuselage rather than more or less straight across as at present.

The effect is that of a winged rocket. The elongated surface and changed wings reduce the "drag" or resistance of the aircraft causing a smoother air flow. Fuel consumption might be reduced by about 50 per cent in this way.

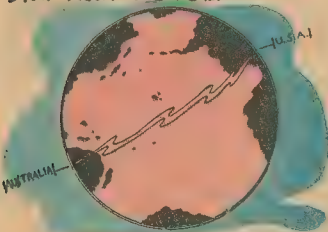
An important aid to aviation will be radar, which will detect the presence of all approaching aircraft, whose actual positions as far away as 25 miles will appear on a screen in the control tower, even in bad weather or at night. The controller will have complete ability to direct traffic to safe landings regardless of the weather. Similar apparatus will warn each pilot if another plane or obstacle is within hazardous range, seeing in all directions in sunlight, darkness, or fog. Planes above, below, ahead, behind, at either side will show on the radar-scope and will furthermore show which way they are going. And the important result of the recent radar contact with the moon is that it will make possible radar-guided rocket planes to the moon and perhaps to other heavenly bodies.

Thus, "Man's dream of speed is a dream that never dies," according to the director of "Exploring the Unknown". Today he flies faster than the fastest thing on earth. Tomorrow his restless brain may conquer in immensity of interstellar space. Yet, however quickly man may speed, he will never overtake his own soaring imagination as it explores the unknown."

SCIENTIFIC WONDERS



DAISY ALLEN LIVES IN OXFORD, ENGLAND. HER HEART STOPPED BEATING FOR 15 MINUTES, BUT INJECTIONS ACTUALLY BROUGHT HER BACK FROM THE DEAD.



BY ELECTRONICS

EXACT COPIES OF LETTERS IN YOUR OWN HANDWRITING CAN BE SENT THOUSANDS OF MILES WITHIN A FEW MINUTES.



PLASTIC

CLOTHES ARE BEING MADE BY SYNTHETIC CHEMISTRY. SOON, DRESSES, HATS, ETC., WILL BE TREATED WITH PLASTIC TO WITHSTAND RAIN.

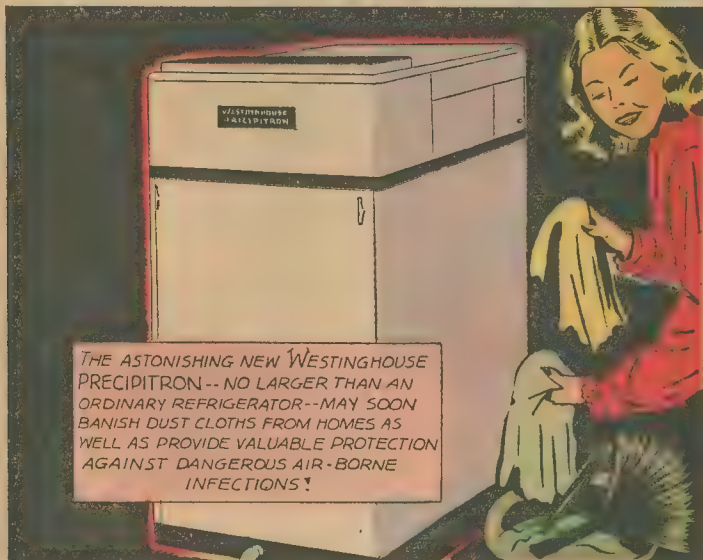


ANTON VAN LEEUWENHOEK

DUTCH SHOPKEEPER AND MICROSCOPE MAKER, WAS THE FIRST HUMAN BEING TO SEE MICROBES.

PRECIPITRON:

FIGHTS DUST AND INFECTIONS!



THE ASTONISHING NEW WESTINGHOUSE PRECIPITRON-- NO LARGER THAN AN ORDINARY REFRIGERATOR--MAY SOON BANISH DUST CLOTHS FROM HOMES AS WELL AS PROVIDE VALUABLE PROTECTION AGAINST DANGEROUS AIR-BORNE INFECTIONS!

THE PRINCIPLE THE PRECIPITRON WORKS UPON WAS FIRST APPLIED FOR VENTILATING AND AIR-CONDITIONING IN 1933.

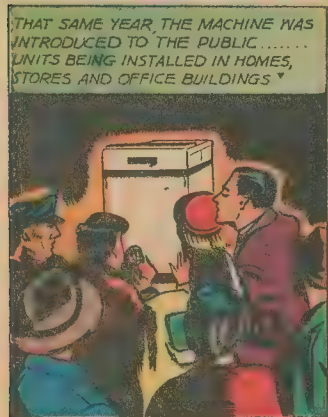
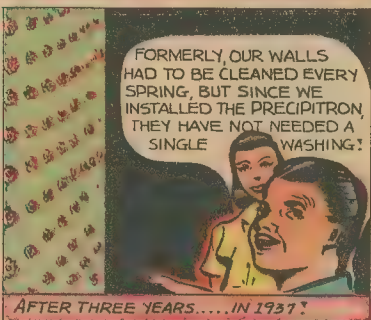
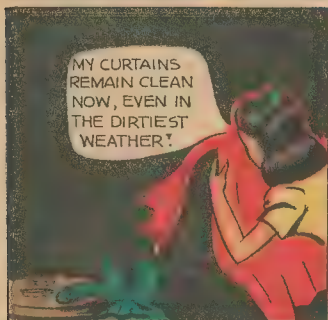
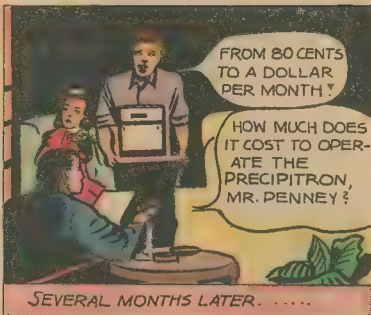


THE INVENTOR, GAYLORD W. PENNEY EXPLAINS HOW THE PRECIPITRON OPERATES

THE MACHINE REMOVES UP TO 90 PER CENT OF ALL DUST PARTICLES IN THE AIR... BANISHING AIR-BORNE DIRT PARTICLES AS SMALL AS $\frac{1}{2,500,000}$ OF AN INCH.



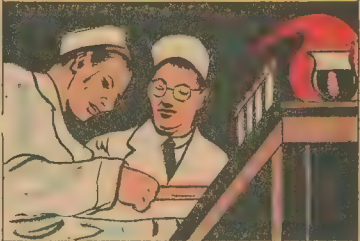
IN 1934, A PRECIPITRON UNIT IS
INSTALLED IN MR. PENNEY'S HOME



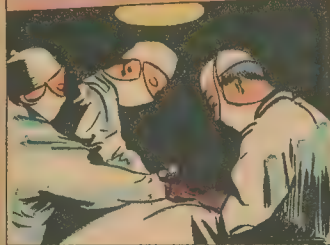
GIANT BATTERIES OF PRECIPITRONS CLEAN MILLIONS OF CUBIC AIR PER MINUTE IN HUGE AIRCRAFT PLANTS. REMOVING DUST AND OILY SMOKE WHICH MIGHT DAMAGE DELICATE MACHINERY.



PURE "LAUNDERED AIR" PROVES INVALUABLE IN THE MANUFACTURE OF BOMB SIGHTS, ARMY BINOCULARS, TANKS, GUNS, ... AND IN THE PREPARATION OF LIFE-SAVING BLOOD PLASMA!



IN HOSPITALS, PRECIPITRONS HELP PROTECT PATIENTS FROM AIR-BORNE INFECTIONS.



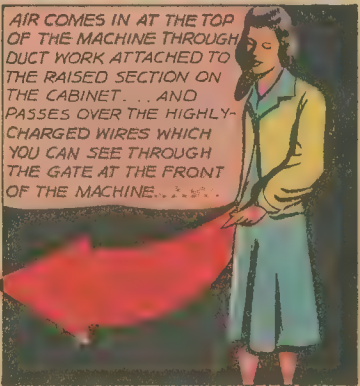
BUT THE PRECIPITRON IS ESSENTIALLY A PEACE-TIME PRODUCT... AND ON JANUARY 31, 1940, WESTINGHOUSE INTRODUCED THE POST-WAR ELECTRO-STATIC UNIT IN NEW YORK CITY.



HERE IS THE BUSINESS END OF THE ELECTRONIC "HOUSEMAID" ---- WHICH IS INSTALLED IN CONJUNCTION WITH AN AIR-CONDITIONING OR CENTRAL WARM AIR HEATING SYSTEM.



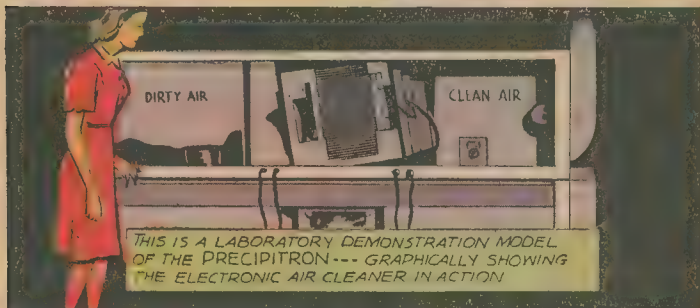
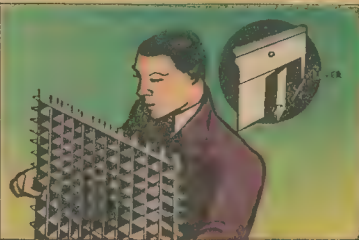
AIR COMES IN AT THE TOP OF THE MACHINE THROUGH DUCT WORK ATTACHED TO THE RAISED SECTION ON THE CABINET. ... AND PASSES OVER THE HIGHLY-CHARGED WIRES WHICH YOU CAN SEE THROUGH THE GATE AT THE FRONT OF THE MACHINE. ...



THE DIRT PARTICLES ARE GIVEN A POSITIVE CHARGE, WHICH DRAWS THEM TO THE NEGATIVELY-CHARGED PLATES IN THE REAR OF THE CABINET, THEN THE CLEAN AIR GOES THROUGH TO BE CIRCULATED THROUGHOUT THE HOUSE?



ACCUMULATION OF DIRT PARTICLES ON THE PLATES CAN BE FLUSHED WITH WATER, BY SIMPLY TURNING A LEVER WHICH WASHES THE IMPURITIES DOWN THE DRAIN.



THIS IS A LABORATORY DEMONSTRATION MODEL OF THE PRECIPITRON--- GRAPHICALLY SHOWING THE ELECTRONIC AIR CLEANER IN ACTION

WESTINGHOUSE EXPECTS PRECIPITRONS TO BE IN QUANTITY PRODUCTION BY OCTOBER

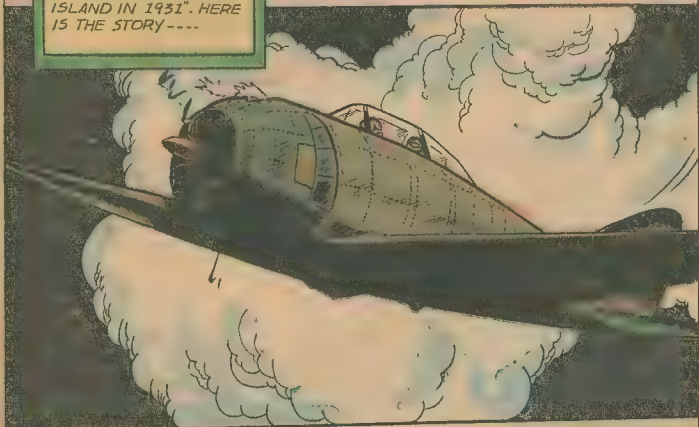


THEN....IT WILL BE GOODBYE TO DUST CLOTHS--- AS A NEW ERA OF CLEAN-LINESS AND EFFICIENCY IS INTRODUCED BOTH FOR THE AMERICAN HOUSEWIFE AND FOR SCIENCE AND INDUSTRY!



"POTATO PATCH" PLANE

THE P47N-5, DEADLIEST OF FIGHTER PLANES, WAS "BORN IN A POTATO PATCH ON LONG ISLAND IN 1931". HERE IS THE STORY----



MAJOR ALEXANDER DE SEVERSKY, YOUNG RUSSIAN PILOT IN WORLD WAR I, IN TIME GREATLY INFLUENCED AMERICAN AVIATION.



AFTER THE WAR, THE YOUNG MAJOR SOUGHT A FUTURE IN AMERICA.

KARTVELI, SOME DAY WE WILL BUILD PLANES IN AMERICA!

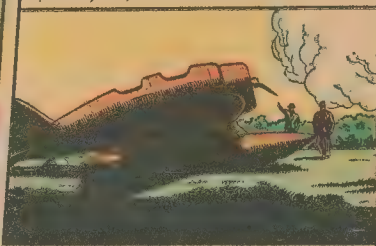


IT WAS NOT UNTIL 1931 THAT SEVERSKY HAD CAPITAL ENOUGH TO START---

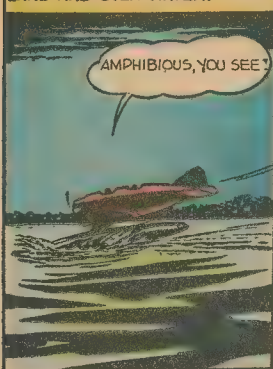
KARTVELI, HERE'S WHERE WE START BUILDING PLANES!



By 1933, THEY HAD TURNED OUT THE SEV-3.



THEY TRIED THE SEV-3 OVER LAND AND OVER WATER.



AMPHIBIOUS, YOU SEE?

THE SEV-3 SET A SPEED RECORD OF 235 M.P.H.



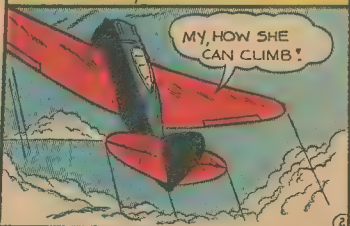
THE NEXT WAR WILL BE IN THE AIR! WE'VE GOT TO BUILD AN EVEN BETTER PLANE, BUT THIS PLANE WILL ALWAYS BE THE PATTERN!



By 1938, THEY HAD BUILT THE P-35.

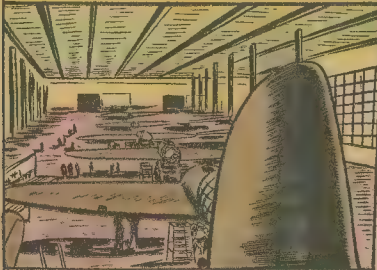


THE P-35, TESTED BY DOOLITTLE,...NOW THE FAMOUS FLYING GENERAL.

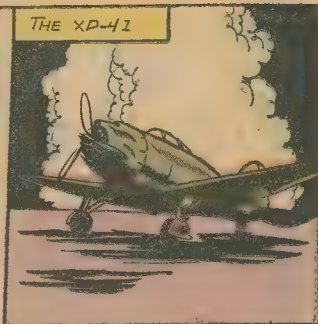


MY, HOW SHE CAN CLIMB!

WITH THE BEGINNING OF THE EUROPEAN WAR, SEVERSKY SPEEDED UP PLANE MANUFACTURE.



THE XP-42



THEN THE FIRST P-47 WAS REJECTED BY THE ARMY.

SHE WON'T DO, SEVERSKY!
WE'VE GOT TO HAVE A
BETTER SHIP THAN THE
GERMAN MESSERSCHMIDT!

THEN I'LL
BUILD A
BETTER
PLANE!

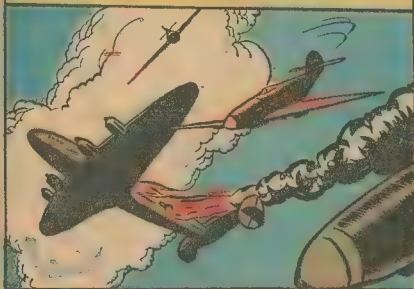


HE BUILT THE "LANCER" (P-43).

SEVERSKY'S GOT SOME-
THING IN THIS NEW TURBO-
SUPER-CHARGER!



BUT, IN 1943, WE WERE LOSING TOO MANY
HEAVY BOMBERS TO THE ENEMY.



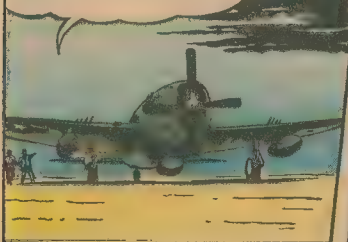
MAJOR SEVERSKY,
WE'VE GOT TO
HAVE A LONG-RANGE
FIGHTER PLANE TO
ACCOMPANY OUR
BOMBERS!

COLONEL,
I'VE GOT
THE
ANSWER!

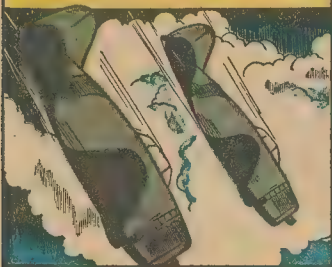


THE ANSWER-- P-47D-25

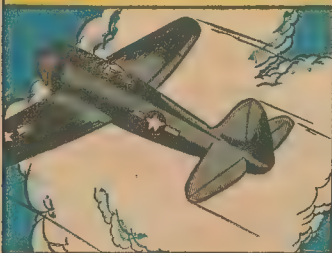
SHE'S A LONG-RANGE FIGHTER---
SHE CAN ESCORT AND
BOMB AND STRAFE.



-- AND SHE WAS THE BEST DIVE-BOMBER
OF THE WAR.



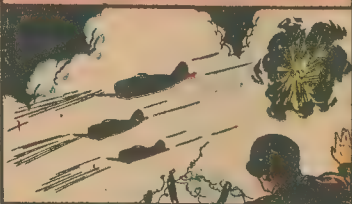
THEN SEVERSKY BROUGHT OUT THE
P-47N-- NEW WINGS, LARGER MAIN
GAS TANK FOR ADDED RANGE.



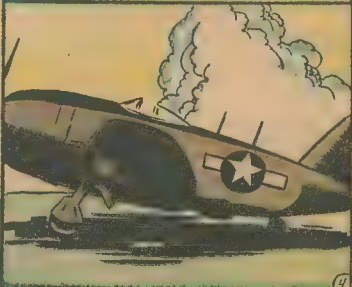
THE P-47D-25 ESCORTING BOMBERS



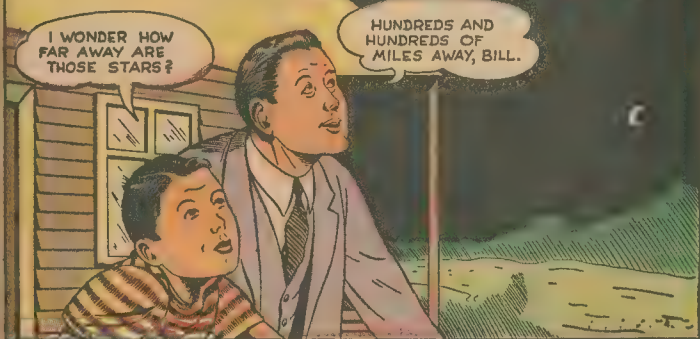
AFTER DROPPING HER BOMBS, SHE WAS
A DEADLY STRAFER



AND THE P-47N-5, LATEST MODEL, HAS
RADAR FACILITIES.



HOW TO MAKE A CAMP AND PERISCOPE



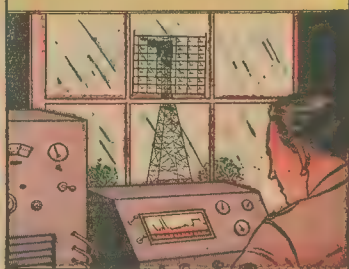
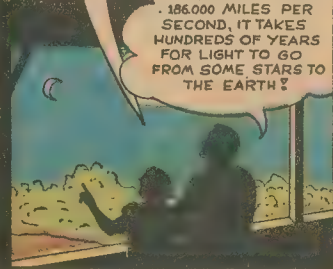
I WONDER HOW FAR AWAY ARE THOSE STARS?

HUNDREDS AND HUNDREDS OF MILES AWAY, BILL.

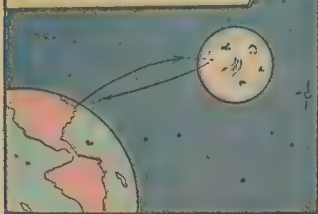
LIGHT TAKES TIME TO TRAVEL, BOB?

SURE, THOUGH LIGHT, X-RAYS AND RADIO-WAVES TRAVEL AT ABOUT 186,000 MILES PER SECOND, IT TAKES HUNDREDS OF YEARS FOR LIGHT TO GO FROM SOME STARS TO THE EARTH?

RADAR WAVES ALSO TRAVEL AT 186,000 MILES PER SECOND. YOU REMEMBER THE TIME A MESSAGE WAS SENT TO THE MOON AND BACK.

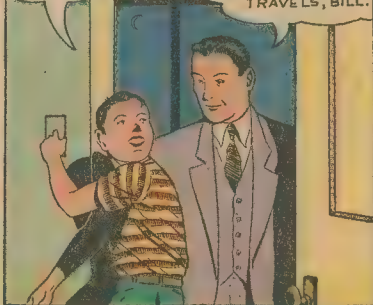


BECAUSE OF THE MOON'S DISTANCE, THE MESSAGE TOOK ABOUT $2\frac{1}{2}$ SECONDS TO MAKE THE ROUND TRIP.



WHEN I TURN ON THE ELECTRIC LIGHT, I SEE IT RIGHT AWAY.

THAT'S BECAUSE OF THE SHORT DISTANCE THE LIGHT TRAVELS, BILL.



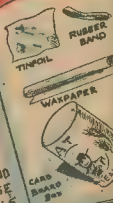
LATER, BILL AND HIS FRIEND TOM ARE IN BILL'S WORKSHOP--

I HAVE NOW SOME KNOWLEDGE OF LIGHT AND ALL THE THINGS WE NEED TO MAKE A PIN-HOLE CAMERA.

LET'S SEE WHAT THE BOOK SAYS, BILL.



TO MAKE A PIN-HOLE CAMERA YOU WILL NEED A FLAT PIECE OF LEAD-TINFOIL OR LEAD-FOIL, A PIECE OF WAXED PAPER, A RUBBER BAND, A LARGE CARD-BOARD BOX (A ROUND BOX SUCH AS THOSE IN WHICH CEREALS COME IS BEST).



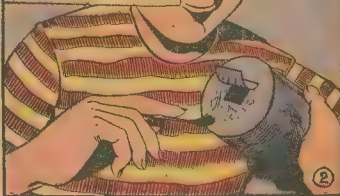
CAREFULLY CUT A SQUARE HOLE MEASURING ONE INCH EACH WAY, IN THE CENTER OF THE BOTTOM END OF THE BOX.

53



USING PERFECTLY FLAT TINFOIL, PASTE A PIECE SLIGHTLY LARGER THAN THE HOLE OVER THE HOLE THAT WAS CUT IN THE BOX.

54



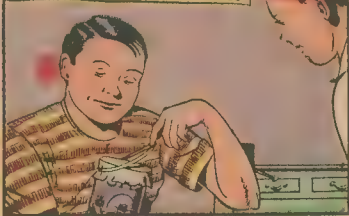
2

CAREFULLY PUNCH A TINY HOLE IN THE CENTER OF THE TIN-FOIL WITH A PIN.



NOW FASTEN THE WAXED PAPER OVER THE OPEN END OF THE BOX WITH THE RUBBER BAND AND YOU'RE READY TO LOOK THROUGH YOUR „CAMERA“.

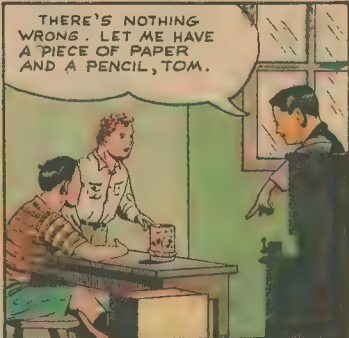
56



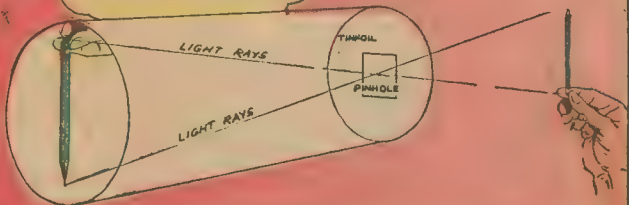
GOLLY! SOMETHING'S WRONG! YOU'RE UPSIDE DOWN!



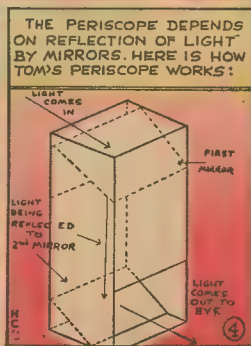
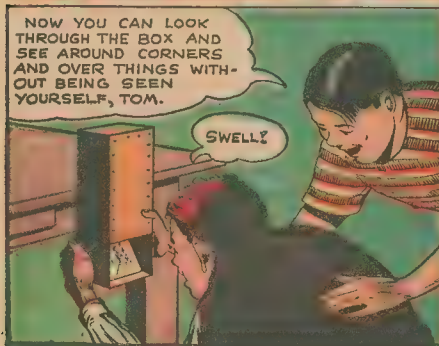
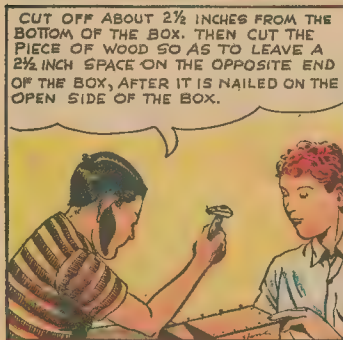
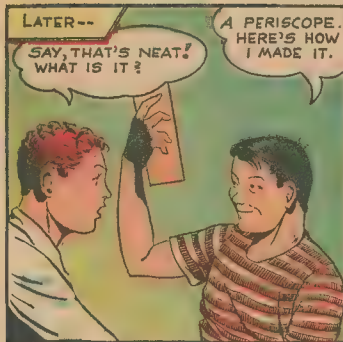
THERE'S NOTHING WRONG. LET ME HAVE A PIECE OF PAPER AND A PENCIL, TOM.



YOU SEE, LIGHT TRAVELS IN PERFECTLY STRAIGHT LINES. WHEN THE LIGHT GOES THROUGH THE PINHOLE, IT SEEMS TO REVERSE DIRECTION.



(3)



HOME EXPERIMENTS

EVERYTHING ON THE EARTH'S SURFACE IS CONTINUALLY BEING PRESSED AND SQUEEZED BY A FORCE WHICH SCIENCE HAS NAMED AIR PRESSURE. HERE IS A WAY TO PROVE THAT THE AIR PRODUCES A STRONG PRESSURE...

AFTER FILLING THE CAN TO A HEIGHT OF 2 INCHES, PLACE IT ON THE STOVE TO HEAT UP. BE SURE THERE ARE NO TRACES OF PAINT, ETC., LEFT IN THE CAN, AS THEY WILL CATCH FIRE...

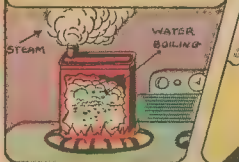
YOU WILL NEED A CLEAN SQUARE CAN, A CORK TO FIT THE CAN, SOME WATER, THE KITCHEN STOVE OR OTHER SOURCE OF HEAT.



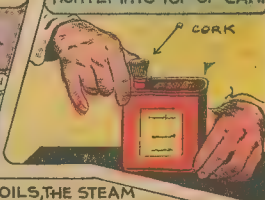
MATERIALS NEEDED



WHEN THE WATER BOILS, WAIT UNTIL YOU SEE A CLOUD OF STEAM COMING FROM OPENING AT TOP OF CAN.



THEN TAKE THE CAN OFF THE FLAME, AND QUICKLY FIT THE CORK TIGHTLY INTO TOP OF CAN.

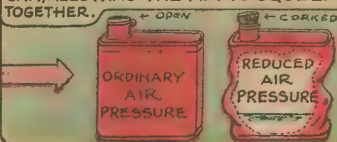


AS THE CAN COOLS OFF, YOU WILL SEE ITS SIDES BEING CRUSHED BY THE PRESSURE OF THE AIR AROUND IT...



CAN YOU FIGURE THIS ONE OUT BEFORE READING THE EXPLANATION?

WHEN THE WATER BOILS, THE STEAM FORCES THE AIR OUT OF THE CAN, CORKING THE CAN AND ALLOWING IT TO COOL OFF CAUSES THE STEAM INSIDE TO CHANGE BACK INTO WATER. THIS LEAVES PRACTICALLY NO PRESSURE WITHIN THE CAN, ALLOWING THE AIR TO SQUEEZE THE SIDES TOGETHER.



ONE OF OUR MOST VALUABLE GASES IS CARBON DIOXIDE. HERE WE PRESENT AN INTERESTING AND ENTERTAINING METHOD OF PREPARING THIS GAS WITH SIMPLE MATERIALS TO BE FOUND IN EVERY HOME.

FOR THIS EXPERIMENT YOU WILL NEED A SODA POP BOTTLE, BAKING SODA, VINEGAR, AND A CORK.

MATERIALS NEEDED



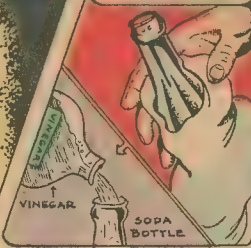
ALSO
A
SMALL
TOWEL



POUR ABOUT TWO TABLE SPOONS OF THE BAKING SODA INTO THE DRY BOTTLE, USING A FUNNEL...



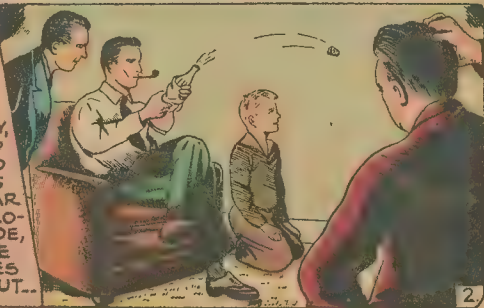
WRAP THE TOWEL AROUND THE BOTTLE AND POUR IN HALF A GLASS FULL OF VINEGAR.



QUICKLY PUT THE CORK IN THE BOTTLE. CAUTION: DON'T JAM THE CORK IN TIGHTLY, JUST ENOUGH TO MAKE IT STAY IN PLACE.



HOLDING THE BOTTLE WRAPPED IN THE TOWEL, POINT IT IN A SAFE DIRECTION, SHAKE IT, AND IF YOU HAVE FOLLOWED DIRECTIONS CAREFULLY, THE CORK WILL POP OUT ABOUT 15 TO 20 FEET. WHEN BAKING POWDER AND VINEGAR ARE MIXED, THEY PRODUCE CARBON DIOXIDE, AND THE PRESSURE OF THE GAS FORCES THE CORK TO POP OUT...



HIGHWAYS THAT SPEAK

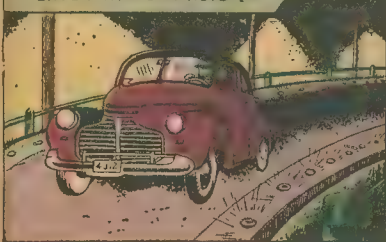
WARNING.. DANGEROUS...
RAILROAD CROSSING
100 YDS. AHEAD

CAUTION
S CURVE

FOR SAFETY'S SAKE,
MODERN ROADS THAT
ACTUALLY TALK WILL BE
INAUGURATED VERY SHORT-
LY... ONLY ONE OF THE
MANY SCIENTIFIC HIGHWAY
IMPROVEMENTS DESIGNED
TO PROVIDE THE ULTIMATE
IN COMFORT AND SECURITY.

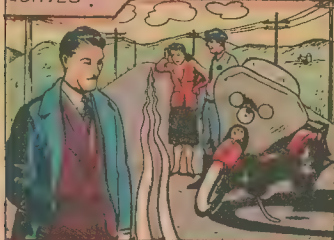
ON THE MERRITT PARKWAY IN CONN., SMALL
GLASS REFLECTORS, SILENT SENTINELS, ARE
EMBEDDED IN THE CONCRETE SHOULDERS.
AND AT NIGHT, CLEARLY OUTLINE THE
CURBING FOR MOTORISTS.

NOW, HEAD-ON COLLISIONS AT
HILL-TOPS CAN BE AVOIDED
THANKS TO AN INGENUOUS MIRROR
PLACED ATOP CRESTS OF HILLS.



MIRROR SHOWS
OTHER SIDE
OF HILL

THIS IS HOW CALIFORNIA MOTORISTS ARE WARNED THAT THEY ARE APPROACHING DANGEROUS CURVES!



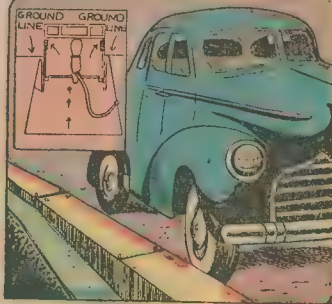
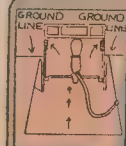
ON OTHER HIGHWAYS, STEEL CABLE FENCING IN ROAD SHOULDERS, WILL YIELD SLIGHTLY WHEN CARS STRIKE IT, BUT WILL NOT BREAK!



ON CHICAGO'S FAMOUS OUTER DRIVE... HYDRAULICALLY-CONTROLLED CURBINGS... AUTOMATICALLY BREAK UP THE 100-FT. HIGHWAY IN VARIOUS WIDTHS... ACCORDING TO THE DENSITY OF TRAFFIC.



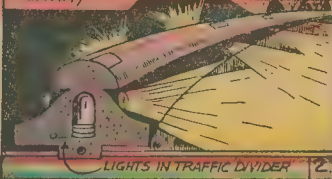
WHEN TRAFFIC IS LIGHT... LANES ARE 50 FEET WIDE BUT WHEN MORE REGULATION IS REQUIRED... IN 11 1/2 SECONDS, 600-FOOT STRIPS CAN BE RAISED TO PROVIDE 25-FOOT LANES.



HIGHWAYS OF THE FUTURE WILL PREVENT SKIDDING, WITH DEVICES PLACED INSIDE CONCRETE SHOULDERS, WHICH WILL SPRAY CHEMICALS TO MELT THE SNOW.



SCIENTISTS PREDICT THAT FLOOD-LIGHTS WILL BE PLACED INSIDE ROAD-SIDE SHOULDERS, THROWING LIGHT MOST NEEDED... DIRECTLY ON THE HIGHWAY



PHONOGRAPH TURNTABLES AND PICKUPS TO KEEP MOTORISTS UP-TO-THE-MINUTE ON ROAD CONDITIONS MAY SOON BE STANDARD AUTOMOBILE EQUIPMENT.



SMALL OBSTACLES WILL BE PLACED ON HIGHWAY SURFACES... AND WHEN THE TIRES PASS OVER, THE ROAD WILL "SPEAK" OVER THE PHONOGRAPH!

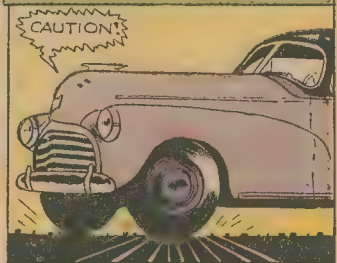
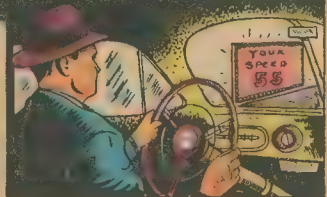
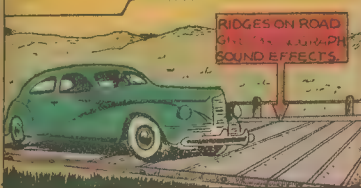


PHOTO-ELECTRIC EYES MAY SOON WARN MOTORISTS AGAINST EXCESSIVE SPEED BY FLASHING THEIR EXACT RATE OF SPEED ON ROADSIDE BULLETIN BOARDS?

TALKING ROADS, WHICH WARN AGAINST APPROACHING HAZARDS, HAVE ALREADY BEEN TESTED. TIRES, PASSING OVER RIDGES, SOUND LIKE 'A NEEDLE ON A RECORD'!



THE HIGHWAY OF TOMORROW PROMISES TO BE REVOLUTIONARY IN DESIGN, PERMITTING AMERICA TO TAKE TO THE ROAD IN COMPLETE SAFETY AND COMFORT.

DIRECTIONS ON THE ROAD SURFACE ENABLE DRIVER TO KNOW WHEN TO TURN WITHOUT TAKING HIS EYES OFF THE HIGHWAY.



DEATH... TO THE INSECTS!



IN WORLD WAR I, OUR SOLDIERS SUFFERED THE PLAGUE OF "COOTIES" (BODY LICE) IN THE TRENCHES.

BROTHER, WHEN I GET OUTA HERE, I'M GONNA SOAK MY BODY FOR A YEAR IN CARBOLIC ACID.

BROTHER, YOU SAID IT!

BUT INSECT PESTS WERE WORSE IN WORLD WAR II, WHEN OUR BOYS HIT THE ISLANDS OF THE SOUTH PACIFIC.

YES, JAPS AT LEAST DON'T GIVE YOU YELLOW FEVER.

GOSH, I'D RATHER FACE A REGIMENT OF JAPS THAN A SWARM OF THESE MOSQUITOES.



YES, SCIENCE
MUST DO
SOMETHING
TO RID US
OF THE GERM
CARRYING
MOSQUITO.

THIS YELLOW
FEVER? OUR
BOYS ARE
DYING BY
THE SCORES,
DOCTOR?

THE GOVERNMENT PUT SCIENTISTS
TO WORK AND THEY SOLVED THE
PROBLEM MORE COMPLETELY THAN
WAS EXPECTED.

WE HAVE
THE ANSWER.
THIS WILL NOT
ONLY KILL
MOSQUITOES
BUT ALMOST
ANY INSECT.

WE CAN-
NOT GIVE
OUT THE
FORMULA
--CALL IT
'DDT'!

AND SOLDIERS SPRAYED THEIR
BARRACKS WITH DDT.

THE EFFECT WAS MARVELOUS.

HAVEN'T SEEN A MOS-
QUITO IN THIS ROOM
FOR THREE WEEKS.

YOU SAID
IT! NOR A
BED-BUG
NOR A
COCKROACH

AND IN THE JUNGLE...

BOY, WHEN YOU PUT A LITTLE
OF THIS DDT ON YOU, YOU
DON'T HAVE TO FIGHT ANY-
THING BUT THE JAPS!

AND IN THE THEATRES OF WAR, OUR
AIR FORCE SPRAYED THE GROUND
WITH DDT BEFORE THE TROOPS
ADVANCED.

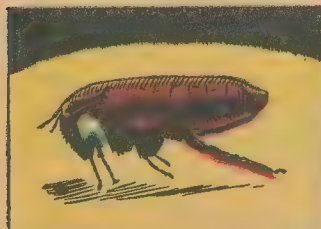


WHEN OUR ARMIES REACHED ITALY, THEY FOUND THE ITALIANS PLAGUED BY THIS...THE LOUSE.

OUR SOLDIERS SPRAYED DDT ON THE THANKFUL ITALIANS.

OH, IT FEELS SO GOOD! LICE, HE NO BITE A ME!

DDT KILLA LICE.



WARTIME SCIENCE ALSO DESTROYED THIS FELLOW...HE IS THE RAT FLEA. HE CARRIES DISEASE GERMS.

AND NOW THE WAR IS OVER, JOHN DOE, CITIZEN, CAN ENJOY HIS SLEEP.



AND THAT NUISANCE - THE FLY - IS ON HIS WAY OUT.



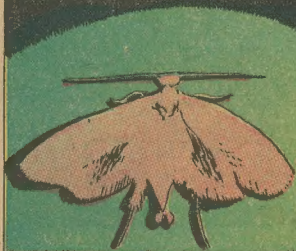
AND THIS UGLY PEST - THE COCKROACH.



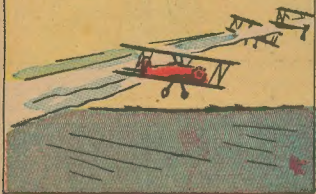
AND THE DRAGON FLY.



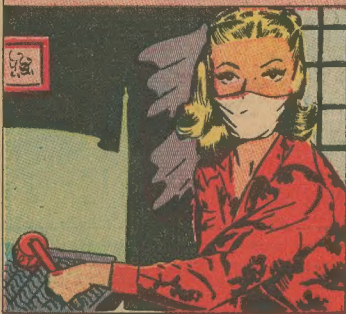
AND THE PESKY MOTH WILL NO LONGER EAT OUR CLOTHES.



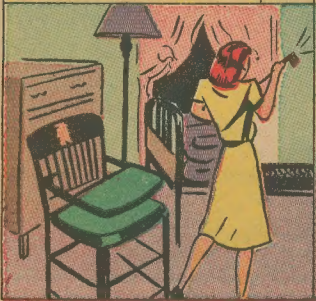
GOVERNMENT RESEARCH HAS PROVED THAT FARMERS CAN RID THEIR FIELDS OF DESTRUCTIVE INSECTS WITHOUT INJURY TO CROPS.



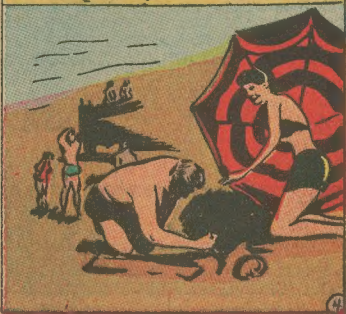
BED-BUGS NEED NO LONGER BITE US.



IN FACT, A THOROUGH SPRAYING OF THE HOUSE ONCE A MONTH WILL KILL OR KEEP AWAY ALL INSECT PESTS.



AND NO MORE MOSQUITOES OR BITING SAND-FLIES ON THE BEACHES.



ODD INVENTIONS*



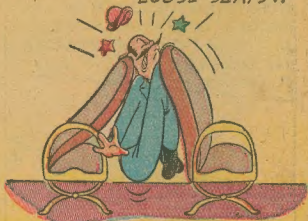
EVERY TRAIN A PULLMAN -

HERE'S A DELIGHTFUL INVENTION CHARMINGLY ILLUSTRATED. WHY TWIST AND TURN IN UNCOMFORTABLE RAILROAD TRAINS WHEN YOU CAN SLEEP LIKE A BABY WITH THIS REMARKABLE DEVICE? WHILE OTHERS FIDGET, THE PROUD OWNER CAN SNEER CONTEMPTUOUSLY AND SLEEP ON.

CAUTION: BEWARE OF
LOOSE SEATS !!



No. 400,131.



IMPROVEMENT IN FIRE-ESCAPES

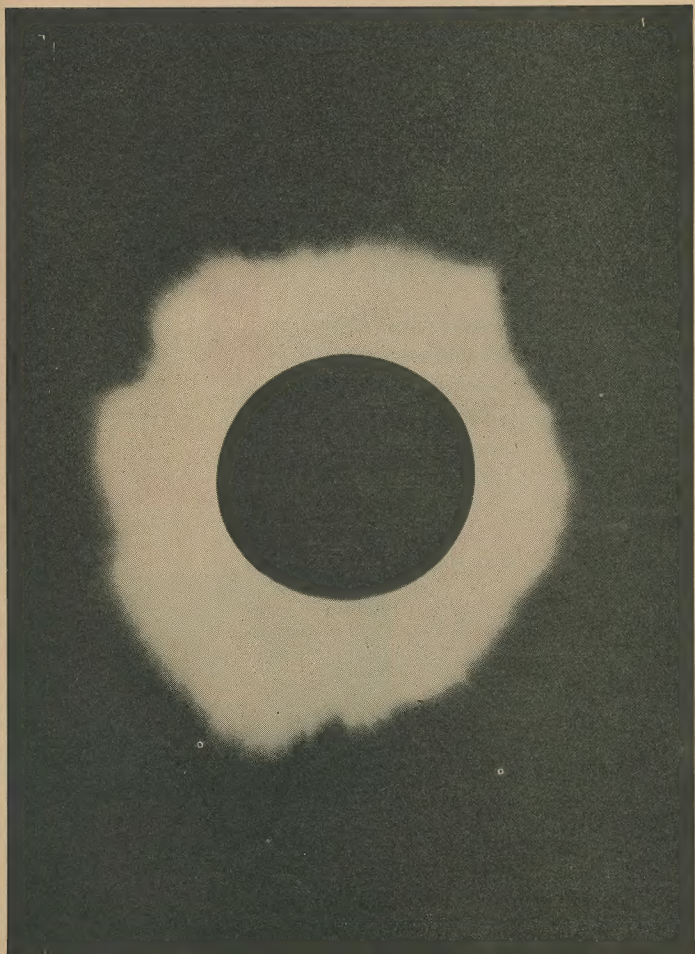
FIRE, THE GREAT DESTROYER, LOSES
IT'S TERRORS FOREVER.

WITH THIS INGENUOUS INVENTION, THE FORTUNATE OWNER CAN NONCHALANTLY LEAVE A BURNING BUILDING OR CAN EFFECT A QUICK EXIT UNDER ANY EMBARRASSING CIRCUMSTANCES. DON'T FORGET TO CARRY THIS DEVICE WITH YOU AT ALL TIMES.

No. 221,855.



* ALL THESE INVENTIONS ARE AUTHENTIC. COMPLETE COPIES OF THE ORIGINAL PATENTS MAY BE HAD BY WRITING TO THE U.S. PATENT OFFICE AT WASHINGTON D.C. GIVE THE NUMBER OF THE PATENTS AND ENCLOSE TEN CENTS.



Sun Completely Covered by the Moon During a Total Eclipse

GIVE YOURSELF BEAUTIFUL, NATURAL LOOKING

Curls and Waves

IN ONLY 2 TO 3 HOURS AT HOME

It's as easy as combing your hair . . .

you can enjoy LOVELY CURLS AND WAVES this new easy way! Give yourself a TRU-KURL Complete Cold Wave in just 2 to 3 hours at HOME! You get the same ingredients used in Beauty Salons giving cold waves costing up to \$15.00 or more. YES! . . . you can have NATURAL LOOKING CURLS AND WAVES that are beautiful and easy to manage!

No other cold wave permanent gives your hair more natural looking curls and waves that "STAY IN" for months and months and leaves your hair so easy to manage!

TRU-KURL works on bleached, dyed, gray or normal hair. It requires no electricity, it is heatless—machineless!

A COLD WAVE PERMANENT with *Tru-Kurl* is easy to use, works on any hair (coarse or fine), lasts months and months, and is so natural looking you'll be amazed!

EACH KIT IS COMPLETE! Kit contains generous size salon-type COLD WAVE solution, 60 curlers, 60 end tissues, cotton applicator, neutralizer. Plus instruction sheet easy enough for a child of six to understand. There's nothing else to buy!



FOR CHILDREN TOO!

The soft fine hair of children takes a wonderful wave. Give your daughter a TRU-KURL cold wave . . . she'll be delighted!

Send for *Tru-Kurl*
complete Home Permanent
cold wave Kit TODAY!

Tru-Kurl Co.

NEWARK, N. J.



A *Tru-Kurl*
COLD WAVE PERMANENT



\$1⁰⁰

NOTHING ELSE
TO BUY

TRU-KURL Co. Dept MS
871 Broad St., Newark, N. J.

Please send me a TRU-KURL Complete Home Permanent Cold Wave Kit. My money will be refunded if not 100% satisfied!

☐ I enclose \$1.00 send the TRU-KURL COMPLETE HOME PERMANENT COLD WAVE KIT postage prepaid.

☐ I enclose \$3.00 send three TRU-KURL COMPLETE HOME PERMANENT COLD WAVE KITS postage prepaid.

Name _____

Address _____

City _____

Zone _____

State _____

MONEY BACK GUARANTEE